WHAT IS CLAIMED IS:

1. A fisheye lens system comprising:

a first lens group having negative refractive power disposed to the most object side;

a second lens group having positive refractive power disposed to an image side of the first lens group;

a distance between the first lens group and the second lens group being variable;

wherein the fisheye lens system takes the maximum focal length state when the distance is minimum, and the minimum focal length state when the distance is maximum;

wherein the maximum image height in the maximum focal length state is different from that in the minimum focal length state; and

in each focal length state the fisheye lens system has an angle of view of 170 degrees or more.

2. The fisheye lens system according to claim 1, wherein the lens system can be used for a plurality of cameras whose image sizes are different with each other; and

wherein when the lens system is attached to a camera having the maximum image size in the maximum focal length state, the lens system has an angle of view of 170 degrees or more; and

when the lens system is attached to a camera having the minimum image size in the minimum focal length state, the lens system has an angle of view of 170 degrees or more.

3. The fisheye lens system according to claim 1, wherein the lens system can be used by changing over two states that are the maximum focal length state and the minimum focal length state; and

wherein upon changing over each state, the first lens group is not moved, and the second lens group is moved.

4. The fisheye lens system according to claim 1, wherein the lens system can be used in any focal length state between the maximum focal length state and the minimum focal length state; and

wherein upon changing the focal length state, both the first lens group and the second lens group are moved.

5. The fisheye lens system according to claim 1, wherein upon focusing from a far object to a close object, the first lens group is moved to the object.

6. The fisheye lens system according to claim 1, further including an aperture stop;

wherein a distance between the most object side lens surface and the aperture stop is the same in the maximum focal length state and in the minimum focal length state.

7. The fisheye lens system according to claim 6, wherein upon focusing from a far object to a close object, the first lens group and the aperture stop are moved in a body to the object side.

8. The fisheye lens system according to claim 1, wherein the lens system includes, in order from the object;

the first lens group;

the aperture stop; and

the second lens group;

wherein upon changing the focal length state from the maximum focal length state to the minimum focal length state, a distance between the first lens group and the aperture stop is fixed, a distance between the aperture stop and the second lens group increases, and a distance between the second lens group and an image plane decreases;

wherein upon focusing from a far object to a close object, the distance between the first lens group and the aperture stop is fixed, the distance between the aperture stop and the second lens group

increases, and the distance between the second lens group and an image plane is fixed; and

wherein the following conditional expression is satisfied:

$$1.2 < M2L/M2S$$

where M2L denotes the magnification of the second lens group in the maximum focal length state, and M2S denotes the magnification of the second lens group in the minimum focal length state.

9. The fisheye lens system according to claim 3, wherein the lens system includes, in order from the object;

the first lens group;

the aperture stop; and

the second lens group;

wherein upon changing the focal length state from the maximum focal length state to the minimum focal length state, a distance between the first lens group and the aperture stop is fixed, a distance between the aperture stop and the second lens group increases, and a distance between the second lens group and an image plane decreases; and

wherein the following conditional expressions are satisfied:

$$1.2 < M2L/M2S$$

$$0.97 < M2L \cdot M2S < 1.03$$

$$fS < |f1| < fL$$

where M2L denotes the magnification of the second lens group in the maximum focal length state, M2S denotes the magnification of the second lens group in the minimum focal length state, fL denotes the focal length of the fisheye lens system in the maximum focal length state, fS denotes the focal length of the fisheye lens system in the minimum focal length state, and f1 (f1<0) denotes the focal length of the first lens group G1.

10. The fisheye lens system according to claim 1, wherein the lens system includes, in order from the object;

the first lens group; and

the second lens group;

wherein upon changing the focal length state from the maximum focal length state to the minimum focal length state, a distance between the first lens group and the second lens group increases, and a distance between the second lens group and an image plane decreases; and

wherein the first lens group includes a negative meniscus lens having a convex surface facing to the object disposed to the most object side; and the second lens group includes a positive lens having an aspherical surface.